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LIBERAL STUDIES COURSE APPROVAL FORM

About this form: Use this form only if you wish to have a course included for Liberal Studies

by developing your course to meet the university's

[The form contains multiple horizontal lines for text entry, but the content is obscured by heavy black redaction bars.]

PART II. WHICH LIBERAL STUDIES GOALS WILL YOUR COURSE MEET? Check all that apply and attach an explanation.

All Liberal Studies courses must contribute to at least one of these goals: most will

not meet them all. As you check them off please indicate whether you consider

PART III. DOES YOUR COURSE MEET THE GENERAL CRITERIA FOR LIBERAL STUDIES? Please attach answers to these questions

[The form contains multiple horizontal lines for writing, which are mostly obscured by heavy black redaction bars.]

January 31, 1989

Subject: Response to Questions Raised by the Liberal Studies Committee

To: Dr. Charles Casnocha, Chairman

Department of Chemistry
University of Toronto

In response to your memo dated January 20, 1989 which listed your
are as follows:

also a request of your College committee:

In general, the concepts which are the foundation for chemistry
that is covered in 110/111, 112/113, and 114/115 were not
developed during a time when women and minorities were not

Concepts in Chemistry

The freshman chemistry majors that take the course are required to complete the following:

- #1 Manipulation of algebraic type expressions (simple and

Complex Algebraic Expressions and Equations)

Complex Algebraic Expressions and Equations

Complex Algebraic Expressions and Equations

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the lecture portion of these courses (interactive lecture

LIBERAL STUDIES COURSE APPROVAL

The Chemistry Department submits CH 101-College Chemistry I and CH 102-College Chemistry II as a two-semester natural science sequence, with a laboratory in each course.

PART I - BASIC INFORMATION

A. We propose this in the category of natural sciences: laboratory course.

B. We are requesting regular approval for this course.

- B. CH 101-102 discusses concepts. However, whenever appropriate, contributions of minorities and women are acknowledged.
- C. Justification of an exception to the reading requirement.
The primary purpose of CH 101-102 is the understanding and application of scientific concepts and principles. Many of these involve the development of higher level quantitative skills.
- D. The CH 101-102 sequence is an introductory sequence not intended for majors. It is intended for the non-science student. No previous chemistry course is assumed and no prerequisite is required. The basic fundamental principles

Liberal Studies Form -- 4

- E. The Liberal Studies Criteria indicate six ways in which all courses should contribute to students' abilities. To which of the six will your course contribute? Check all that apply and attach an explanation.

[The following area contains a series of horizontal lines intended for writing an explanation, but the text is obscured by heavy scanning artifacts.]

The basic fundamental principles and concepts of inorganic chemistry are developed

from the standpoint of atomic and molecular structure with illustrative examples

The effect of pH on the activity and effects of enzymes and biochemistry is

COURSE SYLLABUS
CH 101
Inorganic Chemistry

The Science of Chemistry. 2 lectures
Introduction; the scientific approach.

Methods of Measurement. 3 lectures
British system; metric system; conversions from metric to British system; mass and weight; density; specific gravity; temperature; significant figures.

Fundamental Concepts of Chemistry. 3 lectures

~~Definition of chemistry; matter, elements, compounds, and mixtures; states of~~

matter; physical and chemical properties; physical and chemical changes; chemical energy; important energy transformations; conservation of energy and matter.

The Structure of Matter. 3 lectures
Law of Definite Proportions; Law of Multiple Proportions; atomic weights; subatomic particles; emptiness of matter; isotopes; mass numbers and atomic weights.

The Elements and the Periodic Table. 6 lectures

~~Properties of the elements; classification of the~~

COURSE SYLLABUS
CH 102
Organic Chemistry and Biochemistry

The Nature of Organic Compounds.

3 lectures

Early experiments; vital force and synthetic compounds; isomers; importance of structure; carbon bond angles; rotation on carbon bonds; writing structural formulas; ring compounds.

systematic names; general physical and chemical properties; combustion;
substitution reactions; the nature of alkene reactions; names of alkyl halides

The Chemistry of Lipids.

3 lectures

Structure and hydrolysis of fats: fatty acid constituents: fats and oils.

College Chemistry - CH 101

Laboratory Investigations

1. Density and Specific Gravity
 2. Investigating Chemical and Physical Properties
 3. Law of Definite Composition
 4. ~~Atoms, Compounds and Chemical Reactions~~
-
5. Principles of Combustion
 6. Study of Commercial Soap Products
 7. The Activity of Metals
 8. The Analysis of Water
 9. Solutions and Colloids
 10. Titration and Determination of the % Acetic Acid in Vinegar
 11. Weights of Equal Volume of Gases

College Chemistry - CH 102

Laboratory Investigations

1. Test for the Detection of the Common Element Present in Organic Compounds

~~2. Identification of Organic Compounds Using Boiling and Melting Points~~

3. Hydrocarbons - Preparation and Properties

4. Paper Chromatography

5. Molecular Models - Structural Formulas and Isomerism

6. Alcohols and Their Properties

7. The Physical and Chemical Properties of Organic Acids

~~8. Preparation and Properties of Aldehydes and Ketones~~

BIBLIOGRAPHY

CH 101

The Representative Elements; M.J. Bigelow; Bogden & Quigley, Inc. 1970.

The Nature of the Chemical Bond; Linus Pauling; Cornell Univ. Press 1960.

Descriptive Chemistry; D.A. McQuarrie and P.A. Rock; W.H. Freeman 1985.

Understanding Chemical Reactions; M.C. Day and Barry Corona; Allyn & Bacon 1986.

Teaching Chemistry with Models; R.T. Sanderson; D. Van Nostrand Co. 1962.

Brief Chemistry of the Elements; James I. Hall; W.A. Benjamin 1971.

Testing and Evaluation for the Sciences; William D. Hedges; Wadsworth 1966.

Chemistry: Principles and Practice; George Brown; McGraw-Hill 1979.

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CH 102

The World of Carbon; Isaac Asimov; Collier Books 1962.

Contemporary Organic Chemistry, Volume II, O'Leary, McGraw-Hill, 1976

The Chemicals We Eat; Melvin A. Benarde; McGraw-Hill 1971.

The Merck Index - 9th Ed.; Merck & Co., Inc. 1976.

The Chemical Basis of Life; George H. Schmid; Little, Brown and Co. 1982.